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Application. Filed:	07/21/2003
Applicant:	Vladimir Mordekhay
Appn. Title:	A SYSTEM OF SAMPLE MEDIUM CARRIERS WITH BUILT-IN MEMORY ELEMENTS AND INFORMATION INPUT/OUTPUT STATION FOR THE CARRIERS
Examiner/GAU:	Brian Gordon/1743

Menlo Park, CA, May 17, 2006

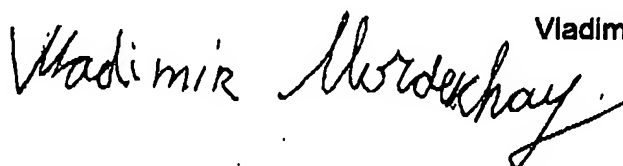
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These pages (Pages 14 and 18 of US 10/624,399 missing in US Patent Application Publication No. 2004/0092025) are faxed by the request of Examiner Brian Gordon/1743. Please transmit these pages to Mr. Gordon.

Sincerely V. Mordekhay

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Applicant



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carrier body 22 and a resettable memory device 28, e.g., an electronic device, such as a integrated circuit (IC) chip for storing information removably inserted into a recess 30 formed in the carrier body 22.

Furthermore, in its peripheral portion, the carrier body 22 has through holes 32, 34, and 36 for engaging with a T-shaped mechanical actuators of the mass spectrometer loading system of the type disclosed in our co-pending U.S. Patent Application No. 10/615,733.

It is recognized that the sample plate carrier can have mechanical features to accommodate different types of robotic grips. This is beneficial since the sample plate carrier can travel between different robotic systems during sample preparation and sample analysis. Fig. 1B is a view of the sample plate carrier of Fig. 1A with the T-shaped projection 37 of the gripping mechanism inserted into the complementary T-shaped slot 34 of the sample plate carrier 20.

Alternatively, openings 39, 41, 43 shown and designated in Figs. 1A and 1B can be used for engagement with claw-like mechanical or electromechanical actuators (not shown). There are also openings for interaction with a receiver/insertor described later.

The recess walls have small projections 38 and 40 (Fig. 1B) and a recess 42 with a flat bottom machined into the carrier body 22 to insure that the front side of the sample plate, not shown in Fig. 1A and defined as the side with samples, is spaced apart from the carrier body 22 to protect the samples from mechanical damage and contamination. The aforementioned recess 42 is needed to accommodate a conforming projection with positioning hole on a standard sample holder described in the aforementioned patent application.

mechanical locking device 26 (If necessary, this can be done automatically with a special mechanism) and to grab the magnetic sample plate 52 directly from the carrier body 22, minimizing manual operations associated with insertion or removal of the sample plates from respective carriers.

Fig. 7 is a three-dimensional view of a sample plate carrier 61 of the second embodiment of the invention with an additional removable protective shield 62, which is installed into the sample plate carrier body 64 between the sample plate 66 and the carrier body 64. This protective shield is used for covering the bottom of the recess 24 (Fig. 1a) and thus protecting the samples from possible contamination that otherwise could be accumulated in the recess. Prior to insertion of a new sample plate into the same sample carrier, the protective shield 62 is removed and is replaced by a new clean shield. The protective shield can be made, e.g., from a transparent or semitransparent plastic film. Fig. 8 is a three-dimensional view of the removable protective shield 62, and Fig. 9 is a view of the sample plate carrier 61 with the shield 62 inserted but with the sample plate 66 removed. The removable protective shield 62 can serve as a disposable or washable element that is changed each time when the new sample plate is installed into the sample plate carrier 61, thus additionally minimizing contamination issues.

The removable protective shield 62 of the second embodiment shown in Figs. 7-9 has flexible tabs 68 and 70 to provide mechanical fixation for the shield 64 within the carrier body 64. The carrier body 64 of the sample plate carrier 61 of the second embodiment has holes 72 and 74 machined in the direct proximity with the position of the locking tabs 68 and 70 to simplify removal of the shield 62 from the carrier body 64.